



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
CHEMICAL SAFETY AND
POLLUTION PREVENTION

MEMORANDUM:

To: Maggie Rudick

From: Eric Bohnenblust Ph.D., Entomologist

Secondary: Jennifer Urbanski Ph.D., Biologist

Date: March 6, 2015

Subject: PRODUCT PERFORMANCE DATA EVALUATION RECORD

Note: Any MRID's found to be **unacceptable** to support claims should be removed from the data matrix.

DP barcode: 424188

Decision no.: 494932

Submission no: 957278

Action code: R340

Product Name: Pyrocid Fogging Concentrate

EPA Reg. No or File Symbol: 1021-1310

Formulation Type: Sprayable Concentrate

Ingredients statement from the label with PC codes included:

Pyrethrins 1.0% PC: 069001

Piperonyl Butoxide 5.0% PC: 067501

Application rate(s) of product and each active ingredient (lbs. or gallons/1000 square feet or per acre as appropriate; and g/m² or mg/cm² as appropriate): Use in and around animal premises: 1.25 fl. oz. undiluted solution/1000 ft² (30 g solution/1000 ft², 0.3 g pyrethrins/1000 ft², 1.5 g PBO/1000 ft²), Equine/large animals: 2 oz./animal of diluted solution (13 fl. oz. product/gallon of oil), Poultry lice/darkling beetles: 0.25-1.25 fl. oz./1000 ft² or ft³, Homes, etc.: 0.5 fl. oz. undiluted product/1000 ft³, Contact and Space Spray: 5 fl. oz. concentrate/1000 ft³, Dried fruit products: 2.5 fl. oz. concentrate/1000 ft³, Peanuts, etc.: 1.5 fl. oz. concentrate/1000 ft³.

0.5 fl. oz. undiluted product = 1.3 mg pyrethrins

1.5 fl. oz. undiluted product = 3.88 mg pyrethrins

2.5 fl. oz. undiluted product = 6.46 mg pyrethrins

5 fl. oz. undiluted product = 12.91 mg pyrethrins

6.25 fl. oz undiluted product = 16.14 mg pyrethrins

Use Patterns: Space, surface, and contact spray for numerous different areas, on animal livestock application

I. Action Requested: Review newly cited studies to support claims against horn flies, horse flies, fleas, ticks, deer flies, face flies, stable flies, bed bugs, hornets, wasps, yellow jackets, and fire ants.

II. Background: Registrant is looking to add a number of new pests and site uses for an already registered Pyrethrins and PBO fogger insecticide.

III. MRID Summary:

47649704. Compilation of Efficacy Data: Pyrethrins + Piperonyl Butoxide.

(1) This study was previously reviewed as part of DP# 361920. The review determined that a space-spray of pyrethrins-PBO (1.0%-5.0%) formulation was effective against German cockroaches at 1 oz. product/1000 ft³, and house flies at 0.04 oz. product/1000 ft³. Pyrethrins-PBO was effective against bed bugs and cat fleas at a rate of 3.0 mg py/m³. Pyrethrins-PBO combinations were effective against *Culex* and *Anopheles* mosquitoes at 1.0 mg py/m³. The review also found that a dilution of 2 oz/gal of 0.1% py demonstrated flushing.

Studies evaluating surface sprays found Pyrethrins-PBO formulations to be effective against German cockroaches, American cockroaches, carpenter ant, and house flies at a rate of 9 mg pyrethrins/m². The lowest effective rate for a pyrethrins-PBO surface spray against cat fleas was 19 mg/m².

(2) **Conclusion: Partially Acceptable.** This MRID supports efficacy claims for space sprays against German cockroaches at rates of 1 oz/1000ft³ and higher, house flies at rates of 0.04 oz/1000ft³ and higher, bed bugs and cat fleas at rates of 1.5 oz/1000ft³ and higher. The MRID shows efficacy against two mosquito species at rates of 0.5 fl. oz./1000 ft³ and higher, but the EPA requires testing against three species for any efficacy claims against mosquitoes.

This MRID also supports efficacy claims for surface applications against German cockroaches, American cockroaches, carpenter ants, and house flies at rates of 3.5 fl. oz. undiluted product/1000 ft² and higher. Flushing claims are also supported by this MRID.

44858204. Residual activities of pyrethroid formulations against field-collected *Ixodes scapularis* and *Amblyomma americanum*.

(1) Previous reviews found this MRID to show acceptable efficacy against deer and lone star ticks at a rate of 40 mg pyrethrins/m².

(2) **Conclusion: Supplemental.** This tested rate for efficacy in this study is above the highest proposed rate on the label, therefore this study does not show acceptable efficacy. In addition, efficacy data are necessary for three ticks species, and only two species were used in this MRID.

47573101. In vitro efficacy evaluations of Pyrenone® 3-15 AC against selected arthropod pest species.

(1) Previous reviews indicate that a 3%-15% Pyrethrins-PBO combination was effective at killing and knocking down fleas at concentrations of 20 mg py/m², ants at concentrations of 40 mg py/m², spiders, flies (except deer or horse flies), mosquitoes (*Aedes*, *Anopheles*, *Culex*), wasps, centipedes, scorpions, foraging termites, dog ticks, and stinging hymenoptera at concentrations higher than 60 mg py/m², cockroaches at 100 mg py/m², bed bugs at concentrations higher than 400 mg py/m²).

(2) **Conclusion: Supplemental.** The rates tested for all pests in this MRID are all higher than the highest proposed label rate. Therefore, while this MRID does show kill and knockdown efficacy of a pyrethrins-PBO combination, this MRID does not support any of the proposed claims on this label.

48773802. In vitro efficacy evaluations of Pyrenone® 3-15 concentrate against selected arthropod pest species.

(1) This MRID evaluated the efficacy of direct sprays of a Pyrenone (pyrethrins-PBO) combination diluted to 0.02% pyrethrins against 25 different arthropod species. Previous reviews show acceptable contact kill of American cockroach, German cockroach, Oriental cockroach, Pharaoh ant, black carpenter ant, Southern fire ant, pavement ant, black widow spider, brown recluse spider, hobo spider, house fly, stable fly, black fly, paper wasps, centipede, cat flea, bark and stripe-tailed scorpions, western subterranean termite, *Culex quinquefasciatus*, *Anopheles quadrimaculatus*, *Aedes aegypti*, american dog tick, brown dog tick, bed bug, and yellow jackets.

(2) **Conclusion: Acceptable.** This MRID supports direct kill claims against the following pests: American cockroach, German cockroach, Oriental cockroach, pharaoh ant, black carpenter ant, Southern fire ant, pavement ant, black widow spider, brown recluse spider, hobo spider, house fly, stable fly, black fly, paper wasp, centipede, cat flea, bark and stripe-tailed scorpions, western subterranean termite, *Culex quinquefasciatus*, *Anopheles*

quadrimaculatus, *Aedes aegypti*, bed bug, and yellow jacket. This MRID demonstrates efficacy of direct kill applications against american dog tick and brown dog tick, however data demonstrating efficacy against a third tick species is necessary for any tick claims.

IV. RECOMMENDATIONS:

(1) Labeling: All on-animal uses should be deleted because data were not submitted to support these efficacy claims. The EPA requires testing against all biting fly species (stable, horn, horse/deer flies, etc.) and house flies on cattle and horses for any on-animal claims.

Claims against hornets, deer flies, face flies, horn flies, horse flies, and firebrats/silverfish are not acceptable because acceptable data were not submitted to show efficacy against these pests.

Claims against ticks are unacceptable because the data only support efficacy against two species and the Agency requires efficacy data for three tick species for any tick claims.

For surface applications, only claims against German cockroaches, American cockroaches, carpenter ants, and house flies are acceptable at rates of 3.5 fl. oz. undiluted product/1000 ft² or higher.

For space applications, only claims against house flies at rates of 0.04 fl. oz. undiluted product/1000 ft² or higher, mosquitoes at rates of 0.5 fl. oz. undiluted product/1000 ft² or higher, German cockroaches at rates of 1.0 fl. oz. undiluted product/1000 ft² or higher, and bed bugs and cat fleas at 1.25 fl. oz. undiluted product/1000 ft² or higher are acceptable.

For direct applications and kill claims, claims against American cockroach, German cockroach, Oriental cockroach, pharaoh ant, black carpenter ant, Southern fire ant, pavement ant, black widow spider, brown recluse spider, hobo spider, house fly, stable fly, black fly, paper wasps, centipede, cat flea, bark and stripe-tailed scorpions, western subterranean termite, *Culex quinquefasciatus*, *Anopheles quadrimaculatus*, *Aedes aegypti*, bed bug, and yellow jackets are acceptable.

(a) The following proposed label claims are acceptable:

[For use indoors as a ULV, space, area, contact spray or thermal fog for listed insects in areas specified on the label]

[Provides flushing action for indoor use as a ULV, space, area or contact spray]

[Contains Pyrethrins, a botanical Insecticide]

[For Use Indoors]

[For Use Outdoors]

[Space Spray]

[Contact Spray]

[Quick knockdown]

[Flushing Action]

[Kills Mosquitoes] [, including those that may transmit West Nile Virus]

[Kills Mosquitoes that may transmit the West Nile Virus]

[Kills mosquitoes]

[Kills listed Flying Insects]

[Kills Stored Product Pests]

[Kills stable and black Flies]

[Kills house flies]

[Kills flies]

[Kills listed Crawling Insects]

[Kills Ants, except harvester ants]

[Kills fleas]

[Kills poultry lice and mites]

[Kills darkling beetles]

[Space sprays permitted when animals are present]

[Spray when animals are present]

[For use in poultry houses]

(b) The following proposed label claims are unacceptable:

[Authorized by USDA for use in official establishments operating under the Meat, Poultry, Shell Egg Grading and Egg Products Inspection Program]

[For use on animal]

[For use on livestock and poultry]

[For use on poultry]

[On Poultry]

[On Livestock]

[Kills horn and face flies]

[Kills face flies]

[Kills horse flies]

[Kills and repels flies]

[Kills ticks]

[Kills lice]

[For use on livestock, poultry]

[Effective and Fast Acting]